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30 October 1980

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 137

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JOINT STATEMENT ON MEETING OF ASEAN NEWS AGENCIES REPORTED

BK161421 Hong Kong AFP in English 1331 GMT 16 Oct 80

[Text] Kuala Lumpur, 16 Oct (AFP)--The national news agencies of ASEAN (Association of Southeast Asian Nations) today agreed to implement a staff exchange programme as soon as possible.

The programme is aimed at promoting better inter-ASEAN understanding and familiarity among news agency journalists with the way of life, both culturally and professionally, of the peoples in the subregion.

This was disclosed in a joint statement here today at the end of a four-day meeting of news agencies of ASEAN.

The meeting reviewed the past year's activities on the practical aspects of co-operation among member agencies, especially the Press Bulletin Service [PBS] (ASEAN form of computerised news exchange network) now in effect among ANTARA (Indonesia), BERNAMA (Malaysia) and the Philippines News Agency (PNA).

Although encouraged by the effective implementation of the PBS from June this year, the meeting decided that there should be greater co-ordination of editorial efforts to ensure that news for exchange were suitable for the different audiences in the various ASEAN countries.

This, the meeting agreed, would encourage greater usage of PBS-transmitted news by the local mass media.

The statement said that the meeting felt that more improvements should be made in the flow of news exchange among participating agencies.

These should be done through:

"A common set of editorial guidelines,

"Strong emphasis on accuracy, speed and a high degree of professionalism, and

"Each agency intensifying its efforts to motivate its subscribers to use as many news items as possible from the ASEAN newspool."

The meeting also agreed that each agency should look into the creation of special desks to encourage specialisation by journalists in various developmental fields such as consumerism, environmentalism, education, agriculture, and industrial and economic development.

The meeting welcomed the statement by the chief delegate of the Thai news agency [TNA], Puan Orasa Khunawat, that TNA hoped to join the PBS news exchange network next year with the expected reduction by the Thai Government of the PBS tariff to 1,000 U.S. dollars a month, the same as for Malaysia and the Philippines.

The meeting urged all ASEAN countries to reduce their PBS tariff in accordance with the UNESCO recommendations.

The statement said that participating agencies agreed to make a common and concerted approach in seeking international assistance in assessing, selecting and obtaining the most appropriate form of computer technology and other modern systems to help improve their editorial operations.

Participating agencies also agreed that intermediate and advanced level journalism courses should be held on a regional basis for staffers of member agencies.

It was also agreed that each agency appoint a senior official to handle ASEAN inter-agency activities and liaison work.

In line with the principle of rotating the venue of the annual meeting among ASEAN news agencies, the TNA will be the next host.

CSO: 5500

BRIEFS

INDIA, CHINA NEWS EXCHANGE AGREEMENT--The UNITED NEWS OF INDIA [UNI] and the XINHUA news agency of China have signed an agreement for exchange of news. This is the first agreement to be signed between the news media of the two countries since communication links were snapped 8 years ago. The agreement was signed yesterday in Beijing by the UNI general manager Mirchandani and director of XINHUA, Zeng Tao. [Text] [SK181658 Delhi Domestic Service in English 1530 GMT 18 Oct 80]

CSO: 5500

TELECOM REPORTS RECORD INVESTMENT FOR CURRENT YEAR

Brisbane THE COURIER-MAIL in English 21 Aug 80 p 10

[Text] Canberra--Telecom will invest a record $1134 million on new works and services this financial year.

Telecom's acting chairman, Mr T.E. May, said yesterday: "We expect a business growth of around 11.5 percent and record demands for new services."

Local telephone traffic should grow by about 7 percent and STD/Trunk traffic by about 13 percent, he said.

Telephone services were forecast to increase by 7 percent, Telex services by 15 percent and Datel services by about 35 percent.

Mr May said that Telecom planned to recruit about 7600 people during the year. Nearly half of them would be school leavers.

By the end of June next year more than 3000 people in a staff of 89,000 would be undergoing technical training in Telecom, he said.

Mr May said about one-fifth of Telecom's expenditure needs would be obtained from public loans and the rest from retained provisions, mainly depreciation and the profit to be earned in the year.

The size of its works program could be gauged from the fact that:

--About 2500 new telephone, Telex and Datel services will have to be installed each working day.

--120 major engineering projects, each costing more than $500,000, (four will cost more than $10 million each) will be in progress or completed during the year. These include installations of equipment at major telephone exchanges and trunk line systems.

--In the $65,500,000 building program there are 80 buildings, each costing more than $250,000.

--Australian industry will receive orders at an average rate of $8 million a week during the year.

CSO: 5500

LOCAL INVENTORS DEVELOP CABLE TELEVISION SAFEGUARD

Perth THE WEST AUSTRALIAN in English 18 Aug 80 p 39

[Text] Two West Australian inventors have developed a computer security system to protect cable television transmissions--a technology that could have an international application.

They are an electronics expert, Mr Monte Sala, and Professor John Ross of the psychology department at the University of WA.

Their techniques in the computer field are well ahead of the Australian market, and initial sales will be aimed at the United States.

Mr Sala and Professor Ross have collaborated on previous inventions, including an electronic security system.

The new Sala-Ross invention operates on the basis that only those who have paid for the service should reap the benefits of cable television.

The cable signal is secured using devices called encryptors. Sala-Ross encryptors can be produced for between $250 and $300 whereas comparable systems cost between $2000 and $200,000.

At present the United States is faced with a "pirate industry" that has developed a means of stealing the cable television transmissions.

It is not illegal to sell the pirate equipment, and there are many outlets because the broadcasters did not foresee the problems associated with security.

Legislation has not been passed yet to protect the industry, which is why the United States is so interested in the Sala-Ross system of security.

Mr Sala said his encryptor could be described as "an electronic envelope" because it safeguarded the messages contained within it.

The Sala-Ross system boasts a multitude of codes.

If a computer was to investigate a million codes a second it would take 585,000 years to try all the combinations employed by the encryptors.

With such a high choice of codes there is a very low probability of the security system failing.

Mr Sala and Professor Ross have been backed by the Systems Research Institute of Australia, whose aim is to promote increased technology.

The Sala-Ross encryptor has received the go-ahead by the SRIA for a number of reasons, including the economical price, compact nature of the unit and the fact that it can easily be fitted to any computer or any terminal without modification to either.

Interest has been shown in the United States for the system and, as Professor Ross says, "because there is a market there that is where it will be sold."

CSO: 5500

BRIEFS

FM STATION IN WEST--Western Australia yesterday joined in the nationwide transmission of ABC frequency modulation radio. The new FM station officially went to air in Perth with a local programme at 1 pm and joined the nationwide transmission at 2 pm. The station will operate 24 hours a day. Adelaide is the centre of ABC FM radio, which also covers Sydney and Melbourne. Brisbane and Tasmania also joined the transmission yesterday. The ABC's FM controller in Perth, Mr Dennis Harrison, said that everything went well. There had been no problems with the time-delay system. In Adelaide, the programme is delayed for WA time and then sent across for transmission. The programme is heard at the same time through out Australia. Because of the time factor, news bulletins have to be updated in WA. West Australians will hear the voices of Perth ABC staff for news bulletins. All other programmes will be transmitted from Adelaide. Yesterday's programme consisted of a range of music from classical to folk. The station will also broadcast plays, documentaries and features from a selection of Australian and overseas productions. [Text] [Perth THE WEST AUSTRALIAN in English 1 Sep 80 p 42]

KIMBERLEY SATELLITE BID--The Federal Government has rejected a suggestion for the Intelsat satellite to be used to improve telephone communications to the Kimberley region. It has told the WA Government that Telecom will spend $10 million upgrading the land system to improve communications for people in the North-West. The honorary Minister for the North-West, Mr Laurance, said in Halls Creek yesterday that he had asked the Minister for Post and Telecommunications, Mr Staley, for the satellite to be used to provide a quicker remedy for communication problems. He had argued that if Intelsat could be used for television services to the area from October, it could also provide better telephone services. However, Mr Staley had said the proposal was not feasible. Intelsat circuits would need special equipment and would not result in a quicker or cheaper solution compared with the radio band. Technical considerations, timing, funding, providing economic circuits and the need to provide a modern communication systen to intermediate towns and areas made the Hedland-Derby-Kununurra broadband radio trunk the best alternative. Mr Laurance, who is on a six-day visit to the Kimberleys said that nearly $1 million would be spent on converting many towns from manual to automatic exchanges, eliminating privately-built lines and connecting new subscribers. Mr Staley had told him that $400,000 would be spent on improving the lightning protection on the South Hedland coaxial cable system. Another $36,000 would be spent to improve the reliability of aerial circuits to the Kimberleys. This work would be completed before the start of the wet season. [Text] [Perth THE WEST AUSTRALIAN in English 27 Aug 80 p 40]

OUTBACK TELEVISION--Canberra--Australia will use the Intelsat international communications satellite to transmit television to some remote areas at Cooktown, Exmouth and Andamooka later this year. The use of Intelsat is an interim measure to provide ABC television services to remote areas before Australia's own domestic satellite is available. [Text] [Melbourne THE AGE in English 28 Aug 80 p 5]

SATELLITE DELAY SOUGHT--Canberra--The role of private enterprise in the ownership and management of a planned domestic communications satellite should not be considered by the Federal Government until next year, a Ministerial committee says. The committee, chaired by the Primary Industry Minister, Mr Nixon, is believed to have concluded that not enough information is available for an early decision on the role of private enterprise in the satellite. The Government aims to have the $120 million satellite operating by 1984-85. There have been differing views about the role private enterprise should have in ownership and management. [Text] [Melbourne THE AGE in English 2 Sep 80 p 3]

CSO: 5500

NATION PLANNING MICROWAVE TELEPHONE SYSTEM

New Delhi PATRIOT in English 2 Aug 80 p 7

[Text] Massive import of electronic equipment will be made to rectify the faltering telephone system in the country, Union Communications Minister C. M. Stephen said in the Rajha Sabha on Friday.

This had become necessary as the cross-bar system had proved disastrous, and 80 percent of the telephones were working on the outdated Strowager system.

Taking part in a motion by Mr Kalyan Roy's (CPI), calling attention to the sorry state of the telephone system in Calcutta and other parts of the country, Mr Stephen said the nation will switch to microwave in a big way.

The system was being indigenously manufactured, he added.

In India, only 35 to 40 percent of telephone calls made were successful, the Minister said. The ratio, the highest in the world, was 70 percent in London and Tokyo and 50 to 60 percent in Paris.

The microwave system will inter-connect exchanges, thus reducing reliance on cables which tended to go "haywire" during monsoons, Mr Stephen said. Once this was done, cables will only connect subscribers with their exchange.

The Minister assured Mr Kalyan Roy that he will look into the recruitment policy of the telephones department.

Mr Roy had charged that the officer cadre was being expanded and the number of workers was shrinking, even as their workload, on account of the increasingly failing system, was rising.

CSO: 5500

BRIEFS

TELEPHONE EXCHANGE FACTORIES--Bangalore, Aug 1--To meet the increasing demand for telephones, the Centre has decided to set up three factories to manufacture telephone exchange equipment. Stating this at a Press conference yesterday Mr P.K. Verghese, member, Telecommunications Operations, (P&T Board), said one of these factories would be set up at Rae Bareli with a capacity to manufacture 200,000 lines of crossbar equipment a year. This would be in addition to the factory already established by the State-owned Indian Telephone Industries to manufacture Strowger type exchange equipment. Since the future technology in telecommunications would be the electronic system, two factories, each capable of manufacturing 500,000 lines of electronic equipment, would be set up. Their location was yet to be decided. [Text][Calcutta THE SUNDAY STATESMAN in English 3 Aug 80 p 11]

CSO: 5500

BRIEFS

WIRELESS PAY TELEVISION--Tokyo, 16 Oct, KYODO--The Posts and Telecommunications Ministry has approved an application by Nikkatsu Corporation for a license to operate a wireless pay television station using ultrahigh frequency waves, a spokesman for the motion picture company said Thursday. Broadcasting facilities are to be built at the Nikkatsu film studio in Chofu, Tokyo. Nikkatsu's television broadcasts can be monitored in most parts of Tokyo, and parts of Chiba, Kanagawa and Saitama prefecture. About 5 million households will be able to monitor it, the spokesman said. Nikkatsu was the first organization in Japan to get a pay television license. [Text] [OW161439 Tokyo KYODO in English 0836 GMT 16 Oct 80 OW]

CSO: 5500

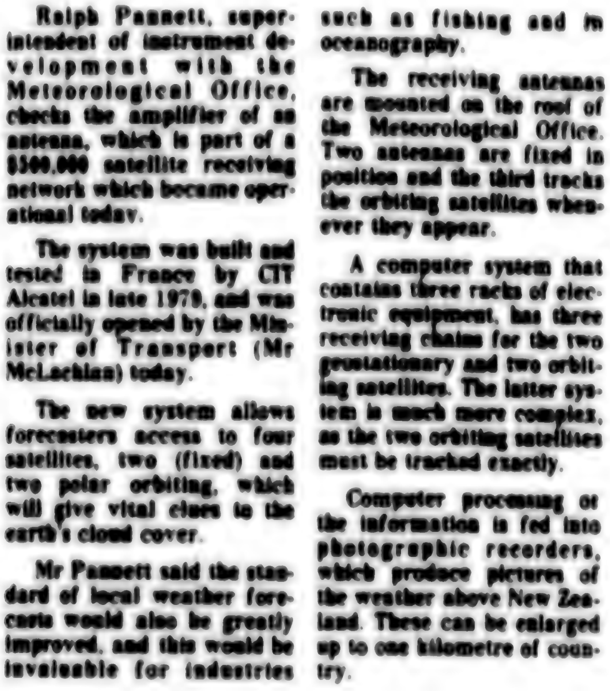
NEW ZEALAND

WEATHER SERVICE ACQUIRES SATELLITE RECEIVING NETWORK

Wellington THE EVENING POST in English 25 Sep 80 p 4

/Photo caption; photo not reproduced/

/Text/



Ralph Pannett, superintendent of instrument development with the Meteorological Office, checks the amplifier of an antenna, which is part of a $500,000 satellite receiving network which became operational today.

The system was built and tested in France by CIT Alcatel in late 1979, and was officially opened by the Minister of Transport (Mr McLachlan) today.

The new system allows forecasters access to four satellites, two (fixed) and two polar orbiting, which will give vital clues to the earth's cloud cover.

Mr Pannett said the standard of local weather forecasts would also be greatly improved, and this would be invaluable for industries such as fishing and in oceanography.

The receiving antennas are mounted on the roof of the Meteorological Office. Two antennas are fixed in position and the third tracks the orbiting satellites whenever they appear.

A computer system that contains three racks of electronic equipment, has three receiving chains for the two geostationary and two orbiting satellites. The latter system is much more complex, as the two orbiting satellites must be tracked exactly.

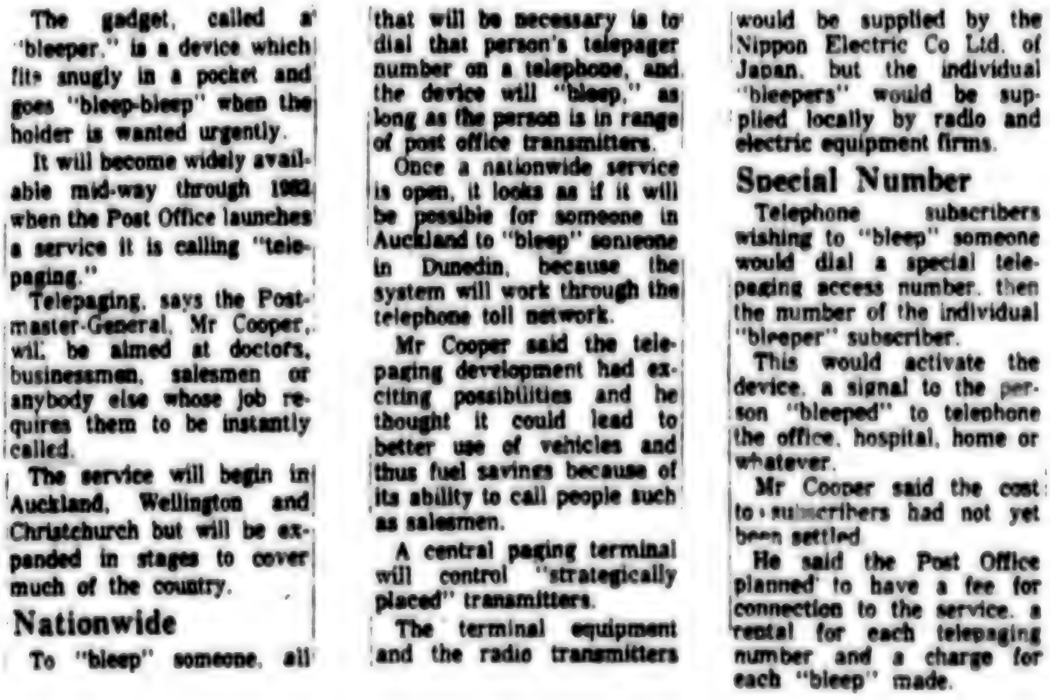
Computer processing of the information is fed into photographic recorders, which produce pictures of the weather above New Zealand. These can be enlarged up to one kilometre of country.

CSO: 5500

POST OFFICE TO LAUNCH TELEPAGING SERVICE IN 1982

Auckland THE NEW ZEALAND HERALD in English 15 Sep 80 p 1

/Text/ New Zealanders will soon be able to use a handy little gadget, which until now has mainly been seen in this part of the world only on television drama shows.



The gadget, called a "bleeper," is a device which fits snugly in a pocket and goes "bleep-bleep" when the holder is wanted urgently.

It will become widely available mid-way through 1982, when the Post Office launches a service it is calling "telepaging."

Telepaging, says the Postmaster-General, Mr Cooper, will be aimed at doctors, businessmen, salesmen or anybody else whose job requires them to be instantly called.

The service will begin in Auckland, Wellington and Christchurch but will be expanded in stages to cover much of the country.

Nationwide

To "bleep" someone, all that will be necessary is to dial that person's telepager number on a telephone, and the device will "bleep," as long as the person is in range of post office transmitters.

Once a nationwide service is open, it looks as if it will be possible for someone in Auckland to "bleep" someone in Dunedin, because the system will work through the telephone toll network.

Mr Cooper said the telepaging development had exciting possibilities and he thought it could lead to better use of vehicles and thus fuel savings because of its ability to call people such as salesmen.

A central paging terminal will control "strategically placed" transmitters.

The terminal equipment and the radio transmitters would be supplied by the Nippon Electric Co Ltd. of Japan, but the individual "bleepers" would be supplied locally by radio and electric equipment firms.

Special Number

Telephone subscribers wishing to "bleep" someone would dial a special telepaging access number, then the number of the individual "bleeper" subscriber.

This would activate the device, a signal to the person "bleeped" to telephone the office, hospital, home or whatever.

Mr Cooper said the cost to subscribers had not yet been settled.

He said the Post Office planned to have a fee for connection to the service, a rental for each telepaging number and a charge for each "bleep" made.

CSO: 5500

INDEPENDENT NEWS SERVICE FORMED IN WELLINGTON

Auckland THE NEW ZEALAND HERALD in English 19 Sep 80 p 3

/Text/

Press Assn Wellington

An independent news and information service, Newztel News Agency Ltd, has been formed in Wellington.

Using existing microcomputer technology and transmission facilities, Newztel intends developing a specialised service to individual clients, principally in the commercial and professional sectors.

The general manager is a Wellington journalist, Mr P. Acland, formerly a press officer in the Prime Minister's Department.

Separate Concept

Mr Acland said in a statement yesterday the Newztel system was based on an entirely separate concept from viewdata or any other scheme.

"Unlike those proposals, Newztel will not have to rely to any extent on mass communication facilities, such as television and telephone installations, which have always been an essential ingredient of viewdata," he said.

Independent

Newztel was an independent company without any affiliation to other interest groups, he said.

In Parliament, the Leader of the Opposition, Mr Rowling, said a company he later named as Data Link Ltd was about to "climb into the ring" and set up a viewdata service at the expense of the Post Office.

Mr Acland told the Press Association Newztel was not connected in any way with Data Link, a company he said he had not heard of till Tuesday night.

Mr Acland declined to divulge the names of other people involved in Newztel. Nor would he say when its services would start.

CSO: 5500

CONFERENCE DISCUSSES TELEVISION SERVICE

OW180739 Beijing XINHUA in English 0713 GMT 18 Oct 80

[Text] Beijing, October 18 (XINHUA)--China is expected to increase its television sets by two to three million a year, according to the country's TV station directors now holding a national conference in Beijing.

With 38 stations and a relay network of 238, China's TV service reaches some five million TV sets in the country, a figure soon to leap.

Four thousand readers' letters reach the central TV station every month. "We are going forward amidst applause and scolding," deputy director of the central TV station Dai Linfeng told XINHUA today.

The use of satellite ground station starting in April this year has made international news coverage prompter. Chinese TV spectators now follow closely the Iran-Iraq battles, Algeria's earthquake, UN conferences and international sports.

Quick developments in economic reform, covering integration of factories and trades, growth of collective ownership, new relations between farm production, factory processing and the market, receive growing attention on TV.

Domestic news breakthroughs include TV shows of court procedures and travel documentaries of beauty spots.

Facing severe criticism from TV viewers on the scarcity of new films, the TV station started its own productions. Forty-six TV plays from provincial stations entered the October 1 National Day TV programmes for the national service. On the proposal of Zhou Yang, chairman of the China Federation of Literary and Art Circles, a new art committee including noted musicians, dramatists, cinema artists and ballad singers will be set up soon to advise the radio and TV on literature and art.

Contracts of cooperation have been signed by the Chinese TV station with a number of countries including Yugoslavia, Romania, Korea, Britain, France, West Germany. One of the great hits that followed is a Chinese TV translation of Norway's TV production of Ibsen's "A Doll's House," shown with an introduction by leading Chinese dramatist Cao Yu. In his student days, he acted the role of the heroine Nora in the first Chinese stage production of the play nearly half a century ago. China has also cooperated with Japan in TV film production.

CSO: 5500

BRIEFS

SERBIA, GDR TELECOMMUNICATIONS COOPERATION--Belgrade, 17 Oct (TANJUG)--Zoran Nastic, republican secretary for communications of the Socialist Republic of Serbia, today received Dr Rudolf Schulze, deputy chairman of the Council of Ministers and minister of posts and communications of the GDR. They discussed possibilities for cooperation in the field of telecommunications and the situation in the communications system and the problems of its development. They also discussed possibilities for cooperation in the field of production of equipment for telecommunication systems. Rudolf Schulze, vice chairman of the GDR Council of Ministers, showed interest in buying equipment from Yugoslav producers. [Text] [LD171214 Belgrade TANJUG Domestic Service in Serbo-Croatian 1058 GMT 17 Oct 80]

CSO: 5500

BRIEFS

CUBAN, GRENADA AGREEMENT--Cuba will send technicians to Grenada to install a new transmitter for the official radio station Radio Grenada, will supply spare parts for the equipment and will grant scholarships to Grenadian youths who will specialize in its maintenance, according to an agreement signed by the two countries. This agreement will make it possible for the broadcasting station to be heard in all Grenadian regions, some of which were not able to get the service. [Text] [FL171310 Havana Domestic Service in Spanish 1100 GMT 17 Oct 80 FL]

CSO: 5500

CRISIS OVER FOR TELECOMMUNICATIONS SECTOR

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 31 Aug 80 p 43

[Article by Eliezer Salles, Brasilia Bureau]

[Text] With more funds allocated for the next fiscal year, the minister of communications hopes to avoid the crisis that was imminent as a result of reduced investment in his area of activity, from which even funding from the National Telecommunications Fund (FNT) has gradually been withdrawn since 1975. Minister Haroldo Correa de Mattos told O ESTADO that "the spectre of crisis has been dispelled," and he explained the basis for his statement: "We have been well-treated in the 1981 budget."

He himself had already expressed his concern at the obstacles the companies in the TELEBRAS Brazilian Telecommunications, Inc have been encountering, including a rate policy inconsistent with the nation's economic situation and the transfer of FNT funds to other activities, and he warned that the country faced the risk of extremely serious consequences in the immediate or near future. "Without expanded services," the communications minister said, "there will be traffic congestion and tieups in domestic and foreign operations. Whereas in the 1960's the country could tolerate the irritating congestion of that period, Brazilian society today cannot afford the effects of a new and greater congestion."

Before the new budget was announced, this was the prospect, with reductions in the investments planned for the TELEBRAS system, which fell from an index of 100 in 1976, with the largest investment, to an index of 46 in the current fiscal year. Investments in the system were about 60,056,000,000 cruzeiros in 1974, and reached 83,621,000,000 cruzeiros in 1975, both figures based on the 1980 value of the cruzeiro. After 1976 there was a yearly decline.

Investments in TELEBRAS System
(1980 cruzeiros)

Year	Million Cruzeiros	Index
1976	105,261	100
1977	93,790	89
1978	80,536	76
1979	73,456	70
1980	48,980	46

Source: Communications Ministry

Congestion

In November 1972, when TELEBRAS was created, there were 2.38 million telephones in Brazil, or 2.4 telephones for 100 inhabitants. In the following year, 950,000 subscriber terminals were contracted for, and another 1,085,000 were ordered in 1974. The volume of contracts for these terminals is considered the major indicator of investment in the sector. The TELEBRAS system already had 1,962,000 terminals installed by the end of 1973 and was planning for 100 [sic] more within a short time. This was possible, Minister Mattos recalled, because the sector had resources, including sources of nonexigible funds--the FNT, promissory notes (self-financing) and reasonable rates, capable of covering operating costs, depreciation and repayment of investments.

However, the FNT funds began to be transferred to other activities. The new law regarding corporations created difficulties in self-financing. The IPI [Finished Goods Tax] exemption and other exemptions on which the companies in the system relied to reduce the cost of their investments were terminated, and the rate became unrealistic. According to recent estimates by Communications Ministry exports, using an index of 100 on 1 January 1973, inflation brought the index to 1,000 in February of this year and to 750 for the interurban rate. In the current fiscal year there have been two rate readjustments for the system, one of 30 percent on 1 February and another one of 11 percent on the first of this month. There will only be one more readjustment, already planned, of 11 percent on 1 October.

Restrictions on investments began in fiscal year 1975. Given the level of indebtedness it had already reached, the sector restricted itself. Contracts for terminals were cut back. As it takes years to bring projects to completion, the number of terminals and telephones installed continued to rise significantly even after the restrictions initiated in 1975, but the effects of the reduced contracts in 1976, 1977 and 1978 are also appearing in the system this year, and will be felt in 1981 and 1982.

Contracting and Installation of Terminals

Year	Contracted (X 1,000)	Installed (X 1,000)
1973	950	
1974	1,085	279
1975	470	337
1976	346	776
1977	200	733
1978	363	617
1979	398	459

Source: Communications Ministry

Unmet Demand

The reduction in terminal contracts aggravated the unmet demand, initiating a process of network congestion, O ESTADO learned from Engineer Romulo Vilar Furtado, secretary general of the Ministry of Communications. Thanks to measures to improve operationality, it has been possible to avoid the effects of this congestion.

The companies in the TELEBRAS system are redoubling efforts to increase productivity. In Rio de Janeiro, the CETEL [Guanabara State Telephone Co] experimental party lines are an example of this effort. Two instruments can be used on one line by two subscribers who use the telephone infrequently. Calls cannot be overheard on party lines, which offer the advantage of greater productivity at less cost to the user.

Despite measures to improve operationality, even though the outlined crisis has been avoided, the effects of the congestion could still manifest themselves in the next few years. This possibility is not denied by the secretary general of the Communications Ministry. In his expert opinion: "Thanks to the recent government decision granting funds to the sector, we may be able to overcome this congestion."

Use of FNT Funds

Heeding the warning of Minister Mattos, the Secretariat of Planning of the Presidency of the Republic has come to recognize the problems of the telecommunications sector, and has allocated funds for more investments. It is possible that FNT revenues will no longer be transferred to other activities through the FND (National Development Fund), as has been the case. Up to 1974, all FNT revenues were applied to the TELEBRAS system. After 1975, these resources were no longer considered to be for the exclusive use of the system, which received only 45.3 percent of the revenue in 1979. Last year, in addition to the transfer of 4,497,000,000 cruzeiros of FNT revenues to the FND, part of the funds (2,346,000,000 cruzeiros) were held back under the provisions of Decree-Law 1,678/79, which instituted a containment reserve with portions of receipts committed to the federal government.

The FNT is formed with revenues from a tax paid by telephone users, corresponding to 30 percent of their monthly subscription rate, plus measured service and interurban calls. Hence, the transfer of its resources is debatable.

FNT Revenues and Their Application
(in millions of cruzeiros at 1980 values)

Year	Gross Receipts	Applied to TELEBRAS system	Diverted from FNT	Cumulative Loss
1974	10,120	10,120	...	...
1975	13,751	12,376	1,375	1,375
1976	14,143	11,314	2,829	4,204
1977	16,710	12,228	4,482	8,686
1978	25,978	16,150	9,828	18,515
1979	21,464	9,737	11,727	30,241
1980*	26,000	13,200	12,800	43,041

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* Estimated

Source: Communications Ministry

6362
CSO: 5500

BRIEFS

CPA CONTRACTS STAND--Sao Paulo (O GLOBO)--Communications Minister Haroldo Correa de Mattos said yesterday that contracts will be honored which have already been signed with firms manufacturing telephone equipment to supply central offices controlled by stored programs (CPA's) of the spatial type in the TELEBRAS [Brazilian Telecommunications Co] system. According to the minister, the major contract was signed with Ericsson to supply 50,000 terminals. The other contracts to be honored do not involve a significant number of terminals. "The other contracts we have signed will be carried out, but the government is studying, together with the manufacturing firms, the feasibility of dropping the phase of the space-system CPA, which represents an intermediate stage between electromechanical central offices and time-system CPA's, and concentrating our efforts on this last stage," Mattos said. The communications minister was in Sao Paulo to inaugurate the private system of operations by telephone (SPOT) of the Sao Paulo Securities Exchange. Using a SPOT line, the minister spoke with his colleague Delfim Netto, chief of planning, in Brasilia. He publicly thanked Netto for the "teaspoonful, or rather soupspoonful, that I received," i.e., the budget allocation for the TELEBRAS system this year, which represents 80 percent of the sum Mattos requested from SEPLAN [Planning Secretariat]. [Text] [Rio deo Janeiro O GLOBO in Portuguese 4 Sep 80 p 20] 6362

CSO: 5500

NEW TELEPHONE LINES, DIRECT DIALING SYSTEM INSTALLED

Santiago TERCERA DE LA HORA in Spanish 9 Sep 80 p 13

[Text] Over the next 36 months, the Telephone Company will install a total of 153,700 electronic dial telephones. This new equipment will enable the company to have a centralized headquarters for operations and supervision and will provide it with systems for the automatic detection of defects in telephones of subscribers.

In addition, as part of the company's overall modernization plans, long-distance direct dialing went into effect on the 1st of the month between Santiago, Valparaiso and Concepcion, thanks to the advanced equipment installed at the Limited Local Service.

These advances were described yesterday at a noon press conference given by the company's general manager, Col Sergio Moller Escala.

Moller said that of the 153,700 planned lines, 100,000 will be used for expansion purposes and the rest to replace old equipment operating in Santiago and Valparaiso for over 50 years. "This expansion and improvement in service is part of the 1981-1983 program," Moller said, "because in the interim, we are developing a program called 'Committed Technology' (Pentaconta) which is being used throughout the world and whose features are now found at the most recent plant we put in operation, La Serena-Coquimbo. The plant has 5,000 lines and the capacity to triple or quadruple that number within a very short period of time."

New Lines

Returning to the subject of the installation of 153,700 new lines over the next 36 months, the general manager of the Chilean Telephone Company emphasized that in its history, there has never been an undertaking of this scope within such a short period of time. The number of lines is equal to over 50 percent of the installed capacity in Santiago. Furthermore, the project implies an accelerated process of modernization in the company since along with the new lines, a substantial modification will be made in the maintenance systems. There will be new systems for the automatic detection of defects in equipment and centralized control centers will be set up to achieve better quality in telephone service.

According to the plan, the 153,700 lines include the replacement of some 65,000 and the incorporation of 10 locations into automatic service, taking the place of some 9,000 lines with manual operation. This work will be done in the metropolitan region (100,000 lines), Region 5 (26,000 lines), Region 8 (10,000 lines) and other areas in the country (17,000 lines). The investment amounts to $40 million.

Direct Dialing

Concerning direct dialing, Colonel Moller said that beginning on 1 September, 215,700 subscribers in the three main cities (Santiago, Valparaiso and Concepcion) have been able to make long distance calls without going through an operator.

This modern service may be used by 191,630 subscribers in the Oriente, Centro-Norte and Sur de Santiago sectors, 14,920 in Valparaiso and 9,360 in Concepcion. Calls made in this manner will enjoy a 10-percent discount on rates charged for long distance, station-to-station calls. These figures represent nearly 70 percent of all subscribers in the three cities mentioned. The remaining 30 percent will be able to use the new system within 90 days.

Codes

Subscribers covered by Distant Direct Dialing (DDD) must first dial Code 03 before the number they wish to call in Valparaiso and Code 041 for Concepcion. In this way, they may dial all automatic telephones in these two cities. Inversely, calls from Valparaiso and Concepcion to the capital must use Code 02, which connects with all telephones in the metropolitan area.

It is not then necessary to request calls using Code 108 (long distance).

During this first phase, DDD will cover telephones beginning with the following: Santiago, Oriente Sector: Pedro de Valdivia Plant 1, 2, 3 and 4, telephones beginning with digits 4, 46, 49, 25, 74, and 23; Las Condes, those beginning with 48 and 28; Apoquindo, those beginning with 29, 20 and 24, making a total of 85,980 subscribers.

Centro-Norte Sector, main plant 1 and 4, those beginning with 8 and 72; Santa Isabel, those with 22; Santa Lucia 1 and 2, those beginning with 3 and 39; Independencia 1 and 2, those beginning with 37 and 77; Yungay, those beginning with 73. The total number of subscribers in this sector enjoying the service is 50,380.

Sur Sector: Las Rejas Plant, those beginning with 79; Maipu, those beginning with 57; La Cisterna, those beginning with 58; and Chiloe, those beginning with 51. Total: 35,360.

Vina del Mar: Planta Libertad, those beginning with 97, and Planta Recreo, those beginning with 6. In Valparaiso, Planta Huito, those beginning with 2, 3, 4 and 7. Total: 14,920 subscribers. Finally, Concepcion, those beginning with 2, making a total of 9,360 subscribers.

The company has sent every subscriber covered by direct dialing a circular providing instructions for using the service and listing rates for 3-minute long distance calls, which would be as follows: from Santiago to Valparaiso and vice versa, 80.63 escudos; from Concepcion to Santiago and vice versa, 140 escudos; and from Valparaiso to Concepcion and vice versa, 140 escudos.

11,464
CSO: 5500

BRIEFS

SATELLITE LINK STATIONS--Mexico City, 8 Oct (EFE)--By 1982 all of Mexico's territory will be covered by television and telephone, Secretary of Communications Emilio Mujica Montoya announced today. Mujica signed a contract with Emilio Azcarraga, president of TELEVISA, one of the world's most important Spanish-speaking television companies, for the construction of 80 satellite link stations to send television and telephone signals. TELEVISA will invest some $8.8 million in the construction of 46 stations of this kind according to the stipulations of the Mexican authorities. The secretariat of communications and transports, meanwhile, will build 34 other stations at a cost of $3 million. The agreement, according to Mujica, is in line with the wishes of the government, with the support of TELEVISA, to expand the nation's communications infrastructures. Mujica stated at the signing ceremony that the television and telephone signals will reach 25 to 30 percent of the nation's population, which up to now was without this service, in some 9,000 small towns. He added that Mexico is already looking into having its own satellite and that it has contacted France and Canada, among other countries, for this purpose. However, he explained that this will not be possible for 4 years. Therefore, use of the existing satellite is foreseen and Mexico has the collaboration of TELEVISA. Miguel Aleman, executive vice president of TELEVISA, commented that the agreement is an example of joint effort for the good of the nation. [Text] [PA110111 Madrid EFE in Spanish 0417 GMT 9 Oct 80]

CSO: 3010

BRIEFS

TELEPHONE EXCHANGE CONTRACT--CIT-Alcatel has just obtained two orders in the Middle East concerning its temporary telephone system "E-10" in Saudi Arabia and Bahrain. CIT-Alcatel will provide its system of temporary communication "E-10" to service the new city of Jubayl in Saudi Arabia (110 km north of Dhahran). This contract which involves 40,000 lines will use the CGA-Alcatel informational skills. An extension of the temporary telephone network "E-10" of Manama, which has been functioning since January 1980,will be provided to the Bahrain Telephones, the local company exploiting the telephone network. [Text] [Paris ELECTRONIQUE ACTUALITES in French 26 Sep 80 p 13]

CSO: 5500

BRIEFS

NEW 'KUNA' HEADQUARTERS--The KUWAIT NEWS AGENCY, KUNA, is to build a new headquarters following recently announced world-wide expansion plans. Overseas offices are to be established, linked by a highly sophisticated communications network via satellite operating 24 hours a day. KUNA aims to become the largest news agency in the Middle East. Tenders for the new building in central Kuwait will be invited next month. [Text] [GF111230 Manama GULF MIRROR in English 11-17 Oct 80 p 2]

CSO: 4820

NEW TELEPHONE EXCHANGES OPENED

Jiddah ARAB NEWS in English 2-3 Oct 80 p 3

[Text]

TAIF, Oct 1 (SPA) — Two new advanced telephone exchanges went into operation Wednesday in Kharmah and Turba areas. They will add 2,000 more telephone lines to the Western Region telephone service. Hamouda Ridda Subhi, acting Taif telephone director, dedicated the Turba exchange Wednesday in the presence of Deputy Mecca Governor Prince Saud ibn Abdul Mohsin.

During the opening of Kharmah exchange Tuesday, Subhi described the facility as one of the most advanced to be installed in remote areas. Saudi Telephone's master plan he added, is not confined to cities only, but also covers villages and remote areas.

Prince Saud made the first phone call from the new exchange to the emir of Turba, Sheikh Abdul Aziz Al-Masoud. The deputy governor expressed his pleasure for the achievement and said this was one of the quick steps to progress in the life of a society adopted by the government to link various areas of the Kingdom to each other and to the rest of the world.

Meanwhile, Saudi telephone announced that serious inconvenience and sometimes danger, caused by cut or damaged telephone cables can be prevented by Saudi Telephone's Cable Location Service, but the co-operation of digging contractors is required.

While an analysis of recent statistical reports indicates that the number of cables damaged per 1,000 working lines has dropped dramatically, even one cut or damaged cable can deprive a subscriber of his telephone service.

The universal warning of "Call before you dig" applies to both private citizens and companies who plan to excavate in an area where telephone cables may already be placed.

The elimination of cable damage can be assured by calling Saudi Telephone. The current numbers for cable location service are: Riyadh — 457-1721, Dammam — 906, Jeddah — 667-107, Taif — 94 and Mecca — 94. In other areas, cable location service can be provided through repair service — 94 or 904.

Eventually, cable location services in all cities will be reached through the special service number 906. This change, for example, will take place in Riyadh on 1 Moharrav 1401. Saudi telephone will keep the public informed of these changes.

Saudi telephone employees will provide maps and diagrams, and will visit construction sites to pinpoint the exact location of telephone cables. This free service is a worthwhile investment of time and effort for both contractors and subscribers.

CSO: 5500

ARABIC-LANGUAGE COMPUTER TECHNOLOGY POTENTIAL DISCUSSED

Arabic-Language Minicomputers

Tunis LA PRESSE DE TUNISIE in French 9 Sep 80 p 4

[Text] Mr Moncef Bel Hadj Amor, deputy minister to the prime minister for the Civil Service and administrative reform, and Mr Firmin Bernasconi of the Intergovernmental Bureau for Computer Technology (IBI) yesterday signed an agreement at the main office of the National Computer Technology Center (CNI) providing for the development of a certain number of computers falling into the "mini" category, a set of data-processing tools programmed in Arabic and operated on the basis of software utilized in this field.

Tunisia will in this way assure itself of technological expertise with regard to certain important points involved in the design and operation of computers. Aside from the obvious technical interest generated by such a project, the economic interest lies in the fact that all the Arab countries will have access to the information thus stored thanks to the availability of Arabic-language computers, using Arabic letters in conformity with the recommendations of the Committee for the Programming of Computers in Arabic, a subsidiary of the IBI.

Furthermore, this project will create the fundamental basis for an Arab computer technology.

About a dozen Tunisian engineers employed by the CNI and a certain number of international experts will be required to set the project in motion.

It will take about 2 years to complete it and it is estimated that it will cost a million dinars, with Tunisia providing 200,000 dinars and the IBI the rest.

At the time of the signing of the agreement, Mr Moncef Bel Hadj Amor stressed the importance the government attaches to this sort of project, which represents an important phase for Tunisia in mastering key technologies so that it can go beyond the assembly phase and attain a higher level of industrial integration.

Computers That Think in Arabic

Tunis LA PRESSE DE TUNISIE in French 11 Sep 80 p 2

[Article by S.B.S.]

[Text] The 8 September 1980 ought to be marked as a red-letter day in the history of Tunisian computer technology. Constituting a turning-point in the evolution of computer technology here, the agreement signed last Monday by Moncef Bel Hadj Amor, deputy minister to the prime minister responsible for the Civil Service and administrative reform, and Firmin Bernasconi, director general of the IBI, will enable Tunisia to inaugurate a new phase: that of computer design.

The official communique indicates that the agreement will enable Tunisia "to develop a certain number of computers falling into the 'mini' category, a set of data-processing tools programmed in Arabic and operated on the basis of software utilized in this field." For Mr Bernasconi, who discussed the agreement and its implications with us at some length, this quite simply and in plain language involves the programming of computers in Arabic, getting them to think in Arabic. Technically and for the CNI, which will manage the operation, it involves a transformation of the computer programming language in order to set up programs (or software, a word Mr Bernasconi avoids) directly in Arabic.

Of Interest to Tunisia and the Arab World

Aside from the obvious interest in the technique, the production of computer programs in Arabic will afford all the Arab countries access to this new technology thanks to the availability of Arabic-language computers using Arabic letters. In the long run, the CNI-IBI projects will create the fundamental basis for the development of an Arab computer technology. Now to achieve this objective the IBI or the two organizations jointly, given the very close relations liking them to one another, will have a long row to hoe. Thus, since 1977, an Arab Computer Technology Committee (COARIN) has been organized inside the IBI under the chairmanship of a CNI director. The committee, which has met on several occasions, has succeeded in unifying the two schools of thought on Arabic-language computer technology (Moroccan and Iraqi) in order to create the Kodar U (representing union, unity) which, moreover, will provide the basis for the CNI-IBI project. Furthermore, the IBI will transfer all its know-how on the subject to the CNI and assign it experts for the purpose of completing the programs in question in 2 years time in collaboration with local engineers.

Will an Economic Interest Be Involved?

Let us bear in mind that, while the project requires an investment of a half a million dinars, the CNI's share of this will amount to only 200,000 dinars. As for the CNI, it will retain operations and marketing rights.

And in view of the technological interference involved in adapting to conditions existing in the Arab countries, Tunisia and the CNI will have the best of the deal in developing this technology along new lines of thought for the benefit of an ever more important and ambitious historical and cultural identity. For Tunisia, it is a question of doing credit to its new position as headquarters for the League of Arab States, precisely by enabling the Arab countries to gain a foothold in this new, key computer technology.

We Have the Brains

For Mr Slaheddine Karoui, president-dierctor general of the CNI, "creating a computer industry is difficult in terms of both technology and marketing. However, the computer industry does not consist only of building computers. It can take several forms. It can consist of building computer supports, terminals, printers...

"The other aspect of the project which I personally am particularly interested in is the software set-up. The software set-up is nothing more than gray matter. In some countries, like Tunisia, this gray matter is available. It is imaginative, creative and is capable of achieving a great deal." The CNI-IBI project, aimed at producing Arabic-language computer programs (or software), therefore comes under the heading of that strategy which consists of going beyond the assembly phase to attain a higher level of industrial integration."

The IBI: an Organization With a Third-World Vocation

For Mr Bernasconi, the IBI is an organization working in the service of developing countries and administered by those countries. In fact, of the 30-odd member nations, only France, Italy and Spain represent Europe and the Western countries and Great Britain plans to join the IBI soon.

Mr Bernasconi feels that Britain's admission will counterbalance France's weight. The Arab countries are not any more numerous [than the Western countries] in the IBI. Aside from the three Maghreb countries: Tunisia, Algeria and Morocco, the Middle East is represented only by Lebanon, Iraq and Jordan.

Therefore, for the IBI, which has been in existence since 1961, it is first of all a matter of consolidating computer technology in the developing countries: the various formulas for granting aid it has dreamed up for these countries (technical assistance scholarships, occupational training, pilot programs, joint assistance programs (PAC) that bring together the IBI and two member nations, one industrial and one undergoing development, for the execution of a tripartite project, and program benefiting the latter, and lastly the production of software in Tunisia).

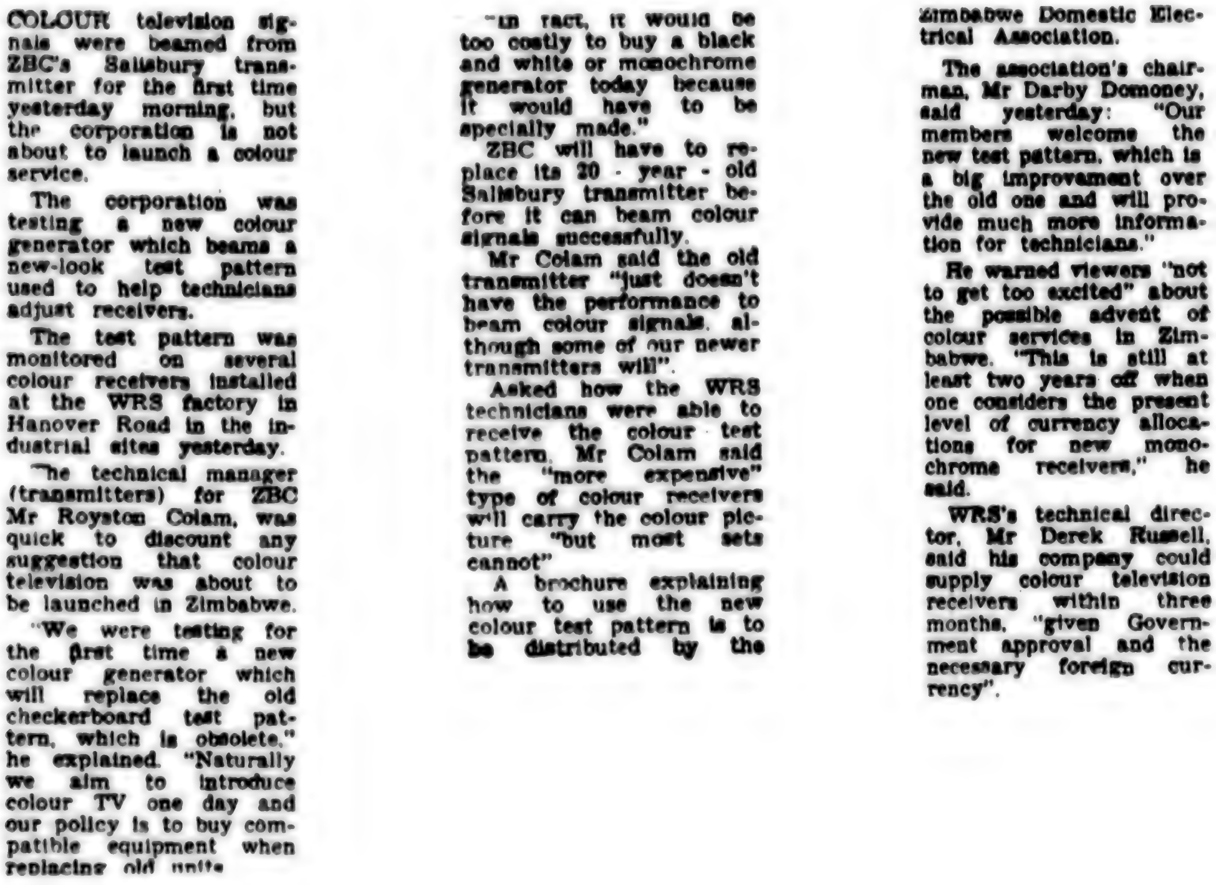
These formulas thus correspond to a clearcut strategy. Before eventually opening the IBI to the biggest computer powers, the United States or Japan, for example, it is a question of first providing member nations with a whole computer technology and human environment that will permit them to resist any kind of pressure.

11,466
CSO: 5500

ZBC TESTS COLOR TELEVISION TRANSMISSION

Salisbury THE HERALD in English 10 Oct 80 p 1

[Text]



COLOUR television signals were beamed from ZBC's Salisbury transmitter for the first time yesterday morning, but the corporation is not about to launch a colour service.

The corporation was testing a new colour generator which beams a new-look test pattern used to help technicians adjust receivers.

The test pattern was monitored on several colour receivers installed at the WRS factory in Hanover Road in the industrial sites yesterday.

The technical manager (transmitters) for ZBC Mr Royston Colam, was quick to discount any suggestion that colour television was about to be launched in Zimbabwe.

"We were testing for the first time a new colour generator which will replace the old checkerboard test pattern, which is obsolete," he explained. "Naturally we aim to introduce colour TV one day and our policy is to buy compatible equipment when replacing old units

"In fact, it would be too costly to buy a black and white or monochrome generator today because it would have to be specially made."

ZBC will have to replace its 20 - year - old Salisbury transmitter before it can beam colour signals successfully.

Mr Colam said the old transmitter "just doesn't have the performance to beam colour signals, although some of our newer transmitters will".

Asked how the WRS technicians were able to receive the colour test pattern, Mr Colam said the "more expensive" type of colour receivers will carry the colour picture "but most sets cannot"

A brochure explaining how to use the new colour test pattern is to be distributed by the Zimbabwe Domestic Electrical Association.

The association's chairman, Mr Darby Domoney, said yesterday: "Our members welcome the new test pattern, which is a big improvement over the old one and will provide much more information for technicians."

He warned viewers "not to get too excited" about the possible advent of colour services in Zimbabwe. "This is still at least two years off when one considers the present level of currency allocations for new monochrome receivers," he said.

WRS's technical director, Mr Derek Russell, said his company could supply colour television receivers within three months, "given Government approval and the necessary foreign currency".

CSO: 5500

DENMARK

POSTAL, TELEGRAPH AGENCY TO START TELEDATA TESTS

Copenhagen BERLINGSKE TIDENDE in Danish 30 Sep 80 pt II p 3

[Article by Michael Rastrup Smith]

[Text] In the course of the coming year, the Postal and Telegraph Agency will be starting tests heralding a TV technological revolution.

A revolution just as significant as when man taught himself to read and write, is on its way. We are moving rapidly into the information age. A new epoch when it will be just as important to possess lots of information as kroner and ører.

For economic reasons, large enterprises have, so far, been the only ones to possess computers, but the enormous expansion and development within the electronics industry have now made it possible for private persons to computerize their everyday lives as well.

The home computer will be introduced in Denmark in mid-1981. The Postal and Telegraph Agency and the three telephone companies which are launching the system call the 'easy chair' computer Teledata. In short, general subscribers will, by means of their telephones and television sets, be able to draw on an unlimited amount of information, ranging from information from the public authorities to offers from business firms and industry.

Two Hundred Subscribers to Get Teledata

For a period of 2 years, Teledata will be run as a test program. A total of 200 people will be given a special color TV set, costing 10,000 kroner. Via a program selector, with numbers and alphabet which come with the set, they will, in addition to the regular programs, be able to tune in on Teledata.

The Teledata information will be stored in two computers. One is to be located in Copenhagen, the other one in Århus. During the test period, the subscribers will be given the possibility of tuning in on 40,000 different pages of information. But the number of pages may gradually be increased without limits.

So far, [illegible] different organizations and enterprises have indicated that they are interested in providing information for Teledata. They have been divided into eight categories.

Travel agencies will provide information on destinations, hotels, vacant trips and costs.

The Danish Press Association will also be participating. A news service may conceivably be set up, and various forms of advertising may be provided.

A third category includes libraries, publishing houses and bookstores. It will here be possible to present all the titles which a library has available. It is also conceivable that a publishing house will provide access to an entire encyclopedia.

Tax Computation

There is also a category comprising public services. Here, the State Information Service will be providing information. The EC Information Office is also expected to participate in the system.

One branch comprises service organizations, for example EDP centers which may conceivably offer various forms of EDP services, such as computation of the subscriber's tax payments, or computations of mortgage payments, etc.

The Consumer Advisory Council will also be participating, for example by providing objective consumer information on goods and services. And the pamphlets of the Consumer Advisory Council will naturally become part of the program.

Department stores and multiple stores constitute an independent category. They will conceivably be providing information on their most important commodity groups and descriptions of these articles.

Financial Institutions

Finally, the financial institutions will be participating. For, once the test period of 2 years is over, the subscribers may become able to transfer funds from their accounts for example to a travel agency where they have just booked a trip. During the test period, however, it will only be possible to collect information via Teledata.

Teledata will be operating by means of alpha-numerical scanners. That implies that the subscriber will strike a code word, for example 'Consumer Advisory Council.' This will give him direct access to the pages containing information on the Consumer Advisory Council. The system is a major improvement over the systems used in other countries.

J. F. Pedersen, marketing manager and the project chief of the Postal and Telegraph Agency, says:

"By means of Teledata, it will, moreover, be possible, in the future, to send messages from one subscriber to the other. The subscriber need not be at home to receive a message. A special text will indicate that there is a message in store for him as soon as he switches on the TV."

"If the test operations prove successful, the number of participants may be increased to 400. However, if it is decided that we shall be getting the system, there is no limit to its expansion. To the average family, the annual costs will range from 1,000 to 4,000 kroner."

Once the home computers have been introduced, a lot of things will be changing. Formally, it will be up to the politicians to decide whether or not we shall be getting them. But, in the opinion of some people, there is no way back. Computers will rapidly become an integral part of our everyday lives, and will thus become indispensable.

7262
CSO: 5500

FRANCE

NATION'S COMPUTER TECHNOLOGY FUTURE EXAMINED

Paris L'EXPANSION in French 19 Sep 80 pp 133-135, 137, 139

[Article by Francois de Witt]

[Text] The traditional pile of technical magazines in the minister of industry's waiting room has disappeared, replaced by a screen equipped with a keyboard. The visitor, after being asked to "wait a few minutes," quickly realizes that it is a computer terminal. Invited to test his knowledge, he loses no time in starting a semblance of dialog with the machine and discovers, for example, that by 1982, 300,000 French citizens will have a home computer (including programmable games), or that in 1985 the total number of computers in operation will equal 8 percent of the working population, compared to 1.95 percent this year.

Intrigued by those figures, our neophyte is offered and accepts more information. But unfortunately, at the moment of the great revelation, the machine gives him an order ("erase in line: 0" [in English]) that he would not understand even if he spoke English! He may tap frantically on the green key, ask the machine to repeat, or consult the usher on duty, but none of it does any good: the microcomputer obstinately repeats its enigmatic formula. In short, it may be true that the computerization of society is well underway, but its language has not yet been completely debugged.

Yes, data processing has worked its way into France. Proof of this is to be seen not only in the growth of computer shops but also in the 10 seminars sponsored in the space of 6 months and in the sale of 100,000 copies of an official document, the now famous Nora-Minc Report. Sales solicitation, whether from manufacturers, software firms, or the government (see "The Data Processing Encyclopedia" on p 177 [not included]), is growing more and more insistent. Jean-Pierre Bigard, who is controller at Lemercier and Company, a water heater manufacturer with 800 employees, says: "Not a day passes without my receiving proposals for new equipment or a new application."

How does the potential user--whether plant manager, teacher, hairdresser, or family head--react to those solicitations, all of them strongly buttressed with talk about faith in progress, the necessity of being competitive, assistance in decisionmaking and--their chief argument--a steady drop in equipment prices?

There is no doubt that the first tangible result of the plan for computerizing society--launched in 1977 by the Nora-Minc Report and then duly formalized in December 1978--was an increase in awareness. For the government, data processing is one of the few activities likely to enable France to resist the rising tide of industrialization in the Third World. Consequently, neither the Ministry of Industry nor the Secretariat of State for Postal and Telecommunications Service hesitated to pull out all the stops: they had recourse to publications, lectures, purchase orders to industrialists, and financial assistance through the intermediary in particular of two new administrative bodies established in 1979: CODIS (Committee for the Development of Strategic Industries) and the ADI (Data Processing Agency).

While new expressions such as "office automation," "telematics," and "robotics" were becoming part of the current vocabulary, newspaper readers and television viewers were learning that besides computers, there also existed things such as data banks, "intelligent" typewriters, coded payment cards, computer-aided design, or flexible automated workshops, all of them tools arising from the same source: data processing.

Like Mr Jourdain, Who Spoke Prose

But those were sophisticated systems, apparently unavailable to the majority and surrounded by the combination of fascination and distress conveyed by "advanced technologies." Moreover, recent years have seen the introduction of digital technologies into such everyday items as watches, toys, telephones, and washing machines without the users always being really aware that by operating those things they were "doing data processing" the way Mr Jourdain spoke prose. The refusal to call a spade a spade--except in the case of the dashboard computer, which has appeared in some car models--has perhaps meant failure to take advantage of the opportunity to bring the computer down into the everyday arena for good and to break certain psychological barriers. Thank God, that has not prevented the data processing market from growing at a surprisingly constant rate. Except for a single pause noted in 1976, the market has grown by between 20 and 25 percent in volume for the past 15 years, while turnover has risen by from 15 to 20 percent. Such growth rates are enough to make any industrialist turn green with envy.

It is not surprising that a still adolescent market should be developing at such speed, especially when so few potential users are currently equipped with computers. Let the reader judge for himself: while it is true that 90 percent of all industrial and commercial firms with more than 1,000 employees (see the table near the end of this article), 60 percent of all CPA's, and 13 percent of all notaries have some sort of data processing equipment, those percentages fall to almost zero when we get into the world of medicine, small business, small and medium-size industry, the lycee, and the home. According to a necessarily empirical estimate by the DIELI (Directorate of

Electronic and Data Processing Industries of the Ministry of Industry), the PME (small and medium-size businesses), the liberal professions, teachers, department heads in large firms, and households whose "data processing purchasing power" is compatible with the lower range of equipment represent a potential market of about 700,000 customers. At present, however, the number of computers of this type in service (excluding administration and management) scarcely exceeds 60,000 units. In short, the process of computerization in that area has not reached even one-tenth of its potential.

But it is making progress. Each year 5,000 new firms buy a computer, while 10,000 others have their payrolls, billing, and general accounting done by service bureaus. An even more significant fact: according to surveys by the Remy Genton Institute, the consumption of data processing equipment between 1975 and 1979 grew twice as rapidly as the number of firms with computers. This is striking proof of the vitality of the "data processing virus." In the opinion of Remy Genton, the decade just past was a "decade of equipment buying," and the users will now slip gradually, and perhaps without their knowing it, into a "decade of familiarization." When your local grocer checks out your purchases using an optical scanner attached to his cash register, when your plumber sends you a reminder typed out by a word processor, or your 14-year-old son wants to study his history lesson on your television screen, you will have every reason to believe that the computerization of society has come to pass.

Is all this an engineer's dream--the obsession of a technocrat whose mind is dominated by the advances made by the Americans and Japanese--or is it really the future knocking at our door?

Productivist Approach

"The data processing revolution is coming at the worst moment," says Alain Minc, a man who cannot possibly be classed among the scorners of the "ravages of progress." To the extent that it is in fact a productivist approach, it is encountering resistance that is all the more lively since the general growth of the economy is unable to offset its effects on purchasing power or jobs.

Let us add that in the big firms, data processing equipment (often confined until now to design departments, production control, or management services, and therefore in the hands of people used to operating the machines) is now going to penetrate commercial departments, marketing, purchasing, and administrative departments, where the personnel is still unfamiliar with the rational and organized processing of information. Whence the "Minc theorem," which states that "the rate of propagation of data processing will be slower to the extent that the universe concerned is not in the habit of reasoning in terms of productivity." In short, the automation of production processes would be easier to accept than the "office of the future." The figures show this clearly: the market for automatic industrial devices (now being invaded by digital technologies) is booming, while the number of firms equipped with word processing machines (9,000) or telecopiers (3,500) remains minimal--and for the moment relatively stagnant.

It will be argued that until now equipment prices have not been competitive, but that thanks to the efforts made by manufacturers and government authorities, they soon will be. That is true. But the fact remains that the price factor (or performance-to-cost ratio) is still the basic obstacle to the computerization of society.

The day will soon come, however, when the microprocessing revolution and continued mass production will bring the lower range of computer within reach of the florist, the hairdresser, and the senior executive. This is true as regards the object itself, but only on condition that the user is something of a "do-it-yourselfer." A "naked" computer is in fact like an automobile with no gasoline in its tank. Without programs (that is, software), the equipment is not good for anything. And that is where the shoe pinches. Xavier Dalloz of the DIELI notes, "I know several doctors who acquired a computer but did not use it. When they realized that they would have to pay an engineer 2,000 francs a day for 3 months to set up a program to maintain their patient files, they balked at the expense."

The cost of the software estimates quoted by consulting firms to the PMI [small and medium-size industry] may range from an amount equal to the cost of the hardware to five times as much. At a minimum, software represents from 1.5 to 2 times the cost of the equipment, and it shows an irreversible upward trend. In these conditions, it is understandable that more than one small firm should hesitate to take the step and that the home computer, despite its low cost (a few thousand francs), should remain a pastime for programming enthusiasts rather than a combination filing clerk, budget manager, and private tutor for personal use. Jean Krautter (in charge of data processing and automation for Peugeot), says, "Believe me, when I get home from work, I don't feel like playing with BASIC!"

The real battle of computerization will be won, therefore, in the area of software. And it must be noted that languages and programs have been progressing at a snail's pace, while hardware has been taking giant steps. How can the "gray matter" be simplified to make its cost acceptable to the user?

There seem to be two choices, and both are now being explored. The first consists of replacing custom programs with packaged programs--that is, designing and then disseminating standard programs. The second consists of incorporating a maximum of software into the equipment itself--that is, selling what are called dedicated machines, capable of performing a limited number of tasks.

Jean-Pierre Baron, director of CEGOS [General Commission on Scientific Organization], says, "In France, no one wants to build standard programs. Even IBM failed there. The other manufacturers will hardly touch it. For their

Firms Are Almost Completely Won Over
(Degree of computerization of the main functions in business)

	(in percentages)	
	in 1980	in 1985
Accounting, personnel management	67	92
Production control	37	71
Marketing	30	58
After-sale service	32	53
Distribution	47	76
Purchasing	34	67
Research and development	24	48
Reports, filing	11	41
Clerical work	13	52

Source: Sample survey of Business Institute members.

Reports, clerical work, and production seem (according to this sampling of big firms) to be the three functions in which data processing--still lagging behind in those areas--will experience the most growth in coming years.

Still a Long Way To Go
(Percentage having computers)

Households	0.01
Lycees (classrooms)	0.2
Liberal professions	0.4
Communes	1.2
Firms with fewer than 10 employees	1.4
Firms with from 10 to 199 employees	23.0
Firms with from 200 to 999 employees	72.5
Firms with more than 1,000 employees	89.2

Source: DIELI, Data Processing Mission, Remy Genton Institute.

While business firms are becoming computerized, the general public, educators, and the liberal professions have not taken the plunge.

part, the software firms tend to design theoretical programs that are poorly adapted to the specific needs of the firms. We can add that the user scarcely encourages them. In the PME in particular, every individual--and especially the CPA--has his little habits that he does not want to give up, even though he is repeatedly told that the "castrating" data processing of yesterday has been replaced by a "liberating" data processing adapted to individual organization and habits.

So what is to be done? Let us recognize to begin with that that last statement is pure myth. Data processing inevitably modifies a firm's organization. And by definition, standard programs do not fit as well as custom programs. Their indispensable development will probably require that users form organizations able to come up with standard programs corresponding to the specific needs of their own profession. Few doctors can afford a program for handling their patient files, but the Order of Physicians seems to be in a good position to oversee the designing and then the dissemination of an acceptable and reasonably priced product. Financial assistance to professions desirous of thus participating in the computerization of their sector is in fact among the priorities of the ADI, which has already signed fruitful agreements with the general insurance agents, the public surveyors, the notaries, travel agencies, and hotel owners.

In addition to its positive effect on costs, that sector-by-sector approach will help to determine the needs more precisely. Like a good number of new technologies, data processing has presented systems before the potential user has expressed any need for them. One example, according to all recent observations, is the fact that the chief function of home computers is--and will remain--that of gameplaying. And if that is true, why should anyone buy an Apple II that must be programmed when "dedicated" microcomputers--that is, with games programmable in advance--are appearing in all the department stores?

Consultant Laurent de Vilmorin says, "In data processing, there is much emphasis on techniques, but the needs met by computers are apt to be ignored. The utility of data processing needs to be specified more clearly." This leads de Vilmorin to distinguish between 14 kinds of data processing (see the table [not included]), each of them corresponding to a specific professional or household function.

It is only by that type of analytical approach to needs, and not by fantastic sales pitches, that potential users will really be convinced. And it is only then that the gamble of computerizing society will pay off.

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ARRIVAL OF COMPUTERIZED OFFICES SLOWED BY DIFFICULTIES

Paris L'EXPANSION in French 19 Sep 80 pp 166-170

[Article by Claude Barjonet: "The 'Office of the Future' Is Not for Tomorrow--The Machines Are Here but the Employees Are Reluctant"]

[Text] Piles of reviews accumulating at the top of a closet, masses of paper stuffed into overflowing baskets, documents spread out in stacks in all corners: a vision of a suffocated office, buried in notes, photocopies, letters and reports of all kinds.... An ordinary sight, you sav. Of course, but we are at Rocquencourt, in the former offices of SHAPE [Supreme Heaquarters Allied Powers], now occupied by IRIA [Institute for Research on Data Processing and Automation]. And the occupant of this chaotic office is Najah Naffah. Profession: engineer. Occupation: directs the "Kayak" project launched by the minister of industry to develop the "office of the future"!

If we believe the office machine salesmen, the electronics wave, rechristened the "office automation" wave for the occasion, is ready to inundate the services sector. Judging from the way Najah Naffah works, it will not happen tomorrow. The minicomputer enthroned by the window has not freed the researcher from paper, far from it. As for the portable terminal, which he never leaves, it of course enables him to communicate--wherever he may be and without the assistance of a secretary--with his colleagues at Harvard or MIT; but the exchange always takes the form of a printout...as would an ordinary telex.

Contradiction: They promise us grandiosely that the goddess of office automation is going to remake society and deliver us from piles of paperwork: but what in fact to the word processing and other telecopier machines produce? Paper. However, more and more businesses are using this equipment. They must have a reason for it, even if the electron has not yet displaced Gutenberg.

Let us visit the plush offices of a Paris head-hunter, a recent convert to office automation. A small, very small business. "Our office employs five people, he says, "two managers, including myself, two secretaries, and...a word processing machine." This latter employee--a Burroughs delivered last March--performs three different tasks.

Reports on each candidate, first of all. "As we save an enormous amount of time with each text modification," notes the office manager, "we no longer hesitate to rewrite a page. This has a considerable effect on our image."

Next, mailings. "Previously, we made photocopies of our form letter and we added the name and the address on the typewriter. The recipients noticed the different shade of type and replied: 'We acknowledge receipt of your form letter.' This had a terrible effect."

Finally, the machine handles the data on business managers, the office's real pool of candidates. "Suppose that we are looking for a 40-year-old marketing director specializing in consumer products with a degree from a certain school," explained the head-hunter. "We enter the criteria on the keyboard, and the screen prints out the files of interest."

This last application--which is closer to data processing than to office automation--is marginal: it only uses 10 percent of machine time, compared to more than half for correspondence and reports. "In fact," estimates the purchaser, "this multiplies our sales efficiency. Our files remain up-to-date with no effort. But, this is an increase in performance which we are not able to measure."

Let us content ourselves then, in estimating the profitability of this operation, with the brief calculation that salesmen (in order to attract the customer) and buyers (in order to justify the expense) are likely to use. Our head-hunter has invested 100,000 francs--training of the two secretaries included--and intends to depreciate the machine in two years maximum. Why so quickly? "Because we did not have to hire a third secretary."

The Beaux Voyages travel agency on Rue Saint-Honore has succumbed to the charms of the same argument. Wedged in a hallway next to a telex machine, the TTX 80 purchased a year ago from CII-Honeywell-Bull eliminated a job position. Sonia, the operator of the machine, uses the keyboard with dexterity and changes around the paragraphs of a United States trip itinerary with the flick of a hand. But, speed in text processing and savings in personnel are not the only attractions of the machine. It has other applications, particularly in business management: you can go from an office machine to a computer simply by changing the disc on the TTX 80. After all, these various types of equipment are always based on a microprocessor.

At GMF (Groupe Maison familiale), we proceed to a completely different level. Handling the data for a company with more than 3,500 employees requires more than a simple "maid of all work". Even more so, since this builder of homes has regionalized their sales force and has an entire printing plant. GMF, which does, of course, have a data processing division, directs its activities in three areas: liaison between the headquarters at Cambrai and the 23 regional offices, the needs of the printing plant, and the word processing requirements.

The "telematic operation" is run by Jean Beguin, the manager of the data processing division. "We want to decentralize certain files," he explains, "to regionalize the rates, for example. We are therefore going to connect all the offices to the central computer at the beginning of next year. Eventually, we will have installed about 100 terminals all over France."

The office automation itself is handled by his assistant Michel Combriat. "We have established two pools of about a dozen people each," he explains. "The central pool specializes in word processing because they are the ones who work for the printing plant." They have four single keyboard machines, but things are going to change soon: GMF is preparing to interconnect the office automation and the telematic services with the central computer. "That should not be too difficult," notes Michel Combriat. "We are basically faithful to IBM. Therefore the equipment is compatible. And since we are leasing it, we can change it as our supplier comes out with new models."

More Often the Small and Middle-Sized Businesses than the Large Ones

In the same manner as the head-hunter, the travel agent and the builder-developer, 13,280 French establishments have invested to-date in word processing equipment. The Remy Genton Institute which specializes in this type of statistic, estimates the number of machines in service at 19,000 units as compared to 2,000 in 1971. "This figure is ridiculous when compared to what has been developed," comments Remy Genton. "It reminds one of the story of the electric typewriter. IBM brought out the first in 1933; in the 1960's, manufacturers thought that all the machines in use would be electric by 1975. Today, in fact, we still count 850,000 manual typewriters in France, or 42.5 percent of those in use.

Who are the potential purchasers of automated office equipment? "At the most, 150,000 out of 600,000 French companies," replies Remy Genton. First of all, the "go-getters", the ones who are exposed to competition and who wager on modern technology to accept the challenge and to lower their general expenses." However, this group only forms a nucleus of 40,000 establishments. The others are adopting a wait-and-see attitude.

A survey made last year by Cegos makes the picture clearer: half of the word processing machines in use are found in small and middle-sized companies with 50 to 500 employees. Aren't the large companies interested? "Actually, not," comments Bernard Bied, a salesman with SMH Adrex, an importer of Canadian machines. "Take the banks and the insurance companies. They are carrying enormous overhead. Logically, they should be our top customers. But they are spending most of their time doing feasibility studies on the feasibility of doing a purchase study. Or else they spend four years on the subject, and when they finally make a decision, the equipment is obsolete. Then they have to start all over again."

Credit Agricole did go through with the project. Cited by the profession as the leader in office automation in banking, they have almost created a "school" for introduction of the equipment. And articles relating their experience proliferated. But, what was the experience in fact? The national bank (25,000 agents) has 17 word processing machines, 7 of which have screens. And the regional banks (58,000 agents) have 111, only 8 of which have screens. Some lawyers' offices are better equipped!

In other businesses, office automation is entering through the back door, starting with one department, for example. It is not necessarily a success. "Nine thousand establishments have tried word processing and abandoned it shortly afterwards," states Remy Genton. And again, this statistic does not include unused equipment which is being kept "just in case". This is the circumstance at Le Secours insurance company. The sales department bought a word processing machine three years ago. But their needs were not well-defined at the outset; thus, it functions at long intervals for small jobs.

The sales department at La Preservatrice seemed to do better. "We decided on the equpment in January 1978," relates Alain Maignan, the head of the department. "Our 703 agents were overrun with memos updating rates, and the 12,000 photocopies that the department made per year often ended up in the waste basket. Since the arrival of word processing, our usage has dropped to 1,200 photocopies."

Yellow Screen vs Green Screen

The initial investment (120,000 francs) was made from the department's budget, as was the purchase of a second machine this year. But has the experience caused the idea to spread within the company? "Yes and no," replies a slightly disappointed Alain Maignan. "The other departments come to see it, inform themselves, take an interest. But they have a very cautious attitude and none of them are investing in it at present."

How do we explain, then, the craze for word processing in the small and middle-sized companies, and the reticence it is encountering in the large companies? "When the head of a small company makes a decision, he is completely in charge," explains a manufacturer. "His choice is generally a single terminal machine, in other words one that is autonomous. Only one or more secretaries work with it, but they continue as in the past to distribute the mail or to answer the phone. Their work will not be greatly changed."

Past a certain size, on the other hand, the company generally prefers to create a typing pool, in order [illegible] think, to get the maximum efficiency from their purchase. (A solution [illegible] great benefit to a manufacturer like IBM who makes most of its profit on the sale of central units. However, without a pool, there is no need for a large central unit...) But centralization is running into numerous obstacles. A study made by Cereq has shown, for example, that creation of a typing pool leads to the disappearance of private secretaries. They profit from the occasion to put them, too, into a pool...which annoys the executives and the secretaries--they lose some of their freedom. As for the typists, working eight hours per day in front of a screen gives them no rest at all. According to a survey made by the CFDT [French Democratic Labor Confederation] at Renault in Rueil, 69 percent of the operators had irritated eyes, and 75 percent were more tired at the end of the day.

The manufacturers react differently to these biotechnological problems. At CII-Honeywell-Bull's Angers plant, a safety engineer sumbitted the conclusions of a study on display screens to management on 7 June 1978. The unions, who were asking for communication of the file, met with a refusal because CII-HB "is implicated as a manufacturer of terminals with screens, and the customers are awaiting its position as a manufacturer!"

How then can the equipment with the best chance of being accepted be selected? A bank in Nancy, part of the CIC group, found an original method. Three manufacturers were in final competition in the bidding for 350 bank terminals. A decision had to be made among them. The bank installed the three systems in the same place--concealing the trademarks on the equipment--and had 300 future users come in during a period of two weeks. The Swedish firm Data-Saab received the contract: their yellow screen was better tolerated than the standard green one.

A Union Which Is Feared

Suppose these all too human difficulties are settled. Another one arises immediately: in a large company how do you unite data processing and office automation? "To the extent that interconnection of this equipment was not foreseen, this is hardly going well," comments an expert. "Even if it had been, the task is difficult. Eighty percent of the computer scientists do not want to hear anything about office automation for fear that part of their work will be taken from them. And if it is imposed on them, then they manage to direct the project themselves in order to retain a little power." This point is crucial because it affects employment. In a large volume prepared for the data processing commission, a team from the university at Dauphine wrote: "Considering market forecasts, elimination of positions could affect 82,000 jobs between now and 1985."

And further, only clerical positions are included in this forecast. But office automation also affects salaried staff. The latter represent, for example, 70 percent of the salary costs for insurance companies. "Middle management is on the witness stand," thinks Jean Lapeyre of the CFDT [French Democratic Labor Confederation]. Which is the reason for the union's struggle to negotiate formulas reconciling employment and productivity.

Meanwhile, the manufacturers display infinite imagination in selling their equipment. SMH Adrex approaches small and middle-sized companies by speaking to them about the clerical workers. Presumably an easy market. But it takes a lot of time to convince a customer. So, the salesman often lets consultants do the work in his place...content to wait for the invitation to bid.

In Search of the Pilot Group

But then, how do the consultants and the other service companies and computer specialists persuade the potential purchaser? It is only a matter of finding the argument which will stand up. Listen to Louis Nauges, coiner of the term "bureautique" [office automation]. "The most difficult situation is that of the company with a small growth rate. The manager will say to me: 'Your equipment interests me, but if it causes me to lay off employees, I'll never get them to accept it.' Then I look for the hidden potential of the company, as in the case of Credit Agricole which in five years became the number two travel agency." And, he adds enthusiastically: "Finally, I give the company a new dynamism!"

IBM came to word processing from the top end of the spectrum. Although they are seeking to make up their delay at the lower end of the product range, they propose complex, expensive solutions primarily, which only interest large groups. But their salemen compensate for this handicap by a well broken-in approach. "When we arrive at a company, we begin by selecting a pilot department," relates George Mattei, in charge of word processing training at IBM. "The department should be independent, but not too independent; its personnel should be ready for change; the atmosphere must be free of 'latent frustration or conflict'." And, George Mattei specifies, "The pilot group must receive even more attention because it is there that the change will be the most radical." In short, IBM plays all its trumps, since the entire sale depends on the "guinea pig".

"Office automation" for the services sector, as we can see, is only in its early stages. Conceiving, manufacturing and selling superb machines is still nothing; they still--and this is the hardest part--have to get the public to accept them. Louis Nauges, who has succeeded in convincing his secretary to install a terminal, speaks plainly: "Office automation is a man's business."

Translation: a marketing concept sufficiently vague that everyone can make use of it; a boon for manufacturers, social psychologists, and organizers of all kinds...each one claiming the ability to speak for the users. The center for increased productivity in the insurance industry understood it, when they wrote: "The real stake in office automation resides, perhaps, in the participation of the users in the studies." Why "perhaps"?

The Boundaries Are Difficult to Trace

"Bureautique", "burotique", office automation, office of the future...the neologism are definitely flourishing. But what exactly does this mysterious phraseology cover? "It's very simple, everything that concerns office organization," we often hear. A rather broad definition since it randomly includes telephones, stencils, computers and...green plants. "Alright, then, someone who can operate a drink machine is involved in office automation without even knowing it?" ironically remarks an importer of very efficient equipment. "Office automation is definitely a 'Spanish inn'", he laments, ready to defend tooth and nail an elitist definition of this much compromised term.

What, then, is office automation in the narrow sense of the term? "It is the group of electronic technologies for the acquisition, processing, storing, distribution, and destruction of information which takes the form of letters, figures, images or words," feels an insurance agent. Yes, but then this includes data processing. "Of course," replies another insurance agent. "The boundaries between office automation, data processing and telecommunication mean nothing. We must speak only of information processing." In short, what Northern Telecom, the Canadian telephone giant, calls, in very Quebecois terminology, "the advent of a numerically intelligent universe".

"Too vague!", they reply at Sema. "Office automation involves information not handled by computer, but which can be processed numerically due to progress in telecommunications and mini-computers." But what, then, is the field of application for this computer which is not one at all by virtue of being one? "Easy!", says a banker. "Office automation begins where data processing ends, and ends where hallway noise begins!"

What, in fact, does Louis Nauges, coiner of the term, think? For him it could not be simpler. "Office automation is a trademark, and no company can use this term in its name without my permission..."

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LM ERICSSON DEVELOPS NEW TELECOMMUNICATIONS TECHNOLOGY

Stockholm SVENSKA DAGBLADET in Swedish 23 Sep 80 p 28

[Article by Johan Myrsten]

[Text] The LM Ericsson firm is preparing for important shifts in its activities. Among other things the firm is planning to break into the enormous future market of "paperless offices" with the help of new electronic subscriber exchanges and telephones. This would reduce dependence on the current best sellers, the computerized AXE telephone stations.

At some time between 1990 and the year 2000 the new market could give LM Ericsson as much income as the traditional ones, according to firm estimates.

Two major shifts are involved:

One is from the current dominance of public customers (often national monopolies) to a larger number of private customers.

The other is from the traditional transmission of figures to communication that also includes data, text and pictures.

Basically the development will occur in two stages, one that has already begun and the other in the more long-term perspective:

1. For several years now LM Ericsson has been working on the introduction of a new electronic generation of subscriber exchanges along with the new telephones equipped with push buttons (the Diavox models).

2. Later on LM Ericsson intends to get into the new markets for the anticipated "paperless offices" using the electronic subscriber exchanges as an opening wedge. Via these exchanges figures, data, text and pictures could be transmitted at the same time and this would give LM Ericsson its chance to sell equipment outside its traditional area--sound communications.

With new computerized telex apparatus (so-called Teletex, or Eritex in the LM Ericsson version), picture transmission of such things as TV conferences, picture screen terminals and other products LM Ericsson could occupy a central position in the total communications flow of an office.

In this way LM Ericsson could start competing on the quickly-growing market for word or text processing, an area which in turn is starting to cross the line of regular administrative data processing (ADB).

Great Optimism

"We have great opportunities in the area of telecommunications. From a market point of view the picture is very good even though the competition is stiff."

These optimistic remarks were made by LM Ericsson's managing director, Bjorn Svedberg, at a recent press conference. His statements differ from LM Ericsson's traditionally modest profile. But the firm has some strong cards in its hand.

LM Ericsson has a very good position on the world market for telephone stations. With the AXE system the firm got a technical headstart and now AXE is also well-established in a number of countries. It is true that most competitors are developing new systems that are more recent but AXE will not become old-fashioned for many years, the company maintains. The reason is the system's so-called modular construction. A module can be replaced with one that is more modern without changing the entire system. The system is a "safe bet for the future" or "modulated toward the future" as they say in LM Ericsson jargon.

The growth of the world market for telecommunications is expected to continue at a rapid pace in the 1980's, with an average growth rate of 8 percent a year (see table). Growth is expected to be most rapid for "private telesystems" that include subscriber exchanges and office equipment. For this group an annual growth rate of 10 percent is predicted and this might be an underestimate according to Bjorn Svedberg.

Growth in the telecommunications market is expected to be most rapid in those parts of the world where LM Ericsson already has a strong position--Europe, the Middle East and Latin America. In the areas where the firm is represented (many countries shut out foreign companies) it has a market share of around 20 percent. On the other hand there is a tendency for purchasing countries to set financial or political conditions that LM Ericsson can't meet.

The monopoly of telecommunications authorities is starting to loosen up in several big industrial nations, especially the United States. This provides new opportunities for multinational companies like LM Ericsson.

Enormous Market

In addition to these promising "traditional" areas LM Ericsson is aiming at the private office market.

"This market will be enormous in the future, so enormous that it is unlikely LM Ericsson won't get at least a small part of it and even that would mean a lot of money," said chief engineer Lars-Olof Noren who is the Ericsson technical director's right-hand man.

"What we can do now is hook up all the existing systems and there our new subscriber exchange plays a key role.

"We can ask ourselves how far we should go. Should we deliver computers, should we compete with IBM--or should we just work on communications? We don't know yet, time will give us the answer," said Lars-Olof Noren.

It is not just the new subscriber exchanges and telephone sets that will give LM Ericsson an entrance ticket to the new office market. The new teletex terminal, Eritex 1000, will also play a vital role.

"Eritex is really a communicating desk computer. Starting with that kind of base we hope to be able to develop several computer terminals," said Lars-Olof Noren.

The availability of components is of strategic importance for both old and new LM Ericsson electronic products. Today the company imports most of what it needs. The rest comes mainly from its affiliate, Rifa, which makes semiconductor circuits that are specially adapted for various uses.

Rifa was formed to eliminate some of LM Ericsson's import needs at an investment cost of roughly 150 million kronor. Now LM Ericsson will invest even more to achieve a greater degree of self-sufficiency. Therefore 75 million kronor will be set aside each year for 3 years for research and development at a newly-formed LSI center within the parent firm. (LSI stands for Large Scale Integration, a concept referring to integrated circuits.)

"By the end of the decade it is possible that most of our components will come from within the company. It is more a question of not handing out what we know and of achieving reliable delivery than of economics. The components account for a relatively small part of our costs."

But LM Ericsson is more doubtful about manufacturing its own data storage equipment and microprocessors since there are so many of them already on the market.

Importance of AXE

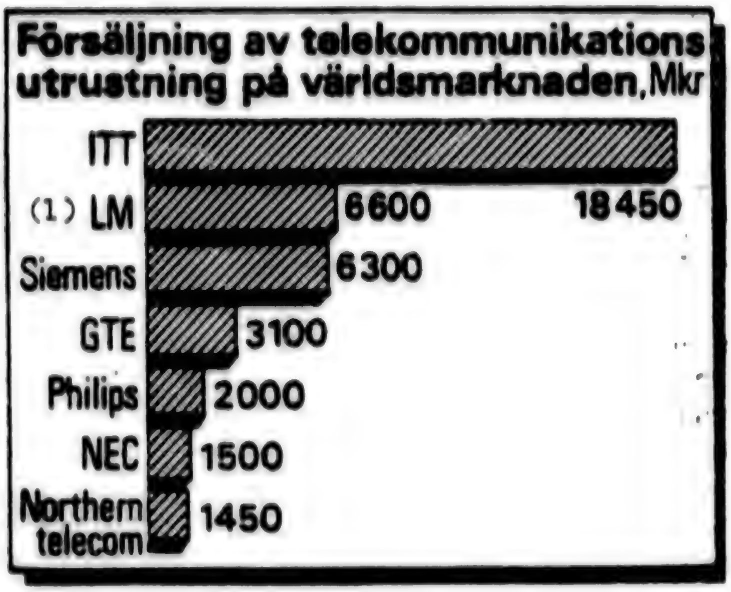
Computer technology is not just a question of machines. The so-called program goods area is increasingly important, more costly and harder to produce. In the United States they are talking about a "software crisis." In this area LM Ericsson is in a good position, largely thanks to the AXE system, according to Lars-Olof Noren.

"Program goods development and the ability to handle program costs are an essential part of AXE. We feel LM Ericsson has an advantage there compared with other companies both in the telecommunications branch and in computers. That is the other way in which AXE is very important to us."

World Market for Telecommunications (in billions of dollars)

	1977	1982	1987	Annual % growth 1977-87
Telephone stations	10.2	14.8	21.4	7.7
Transmission equipment	10.9	16.1	23.4	8.1
Terminals	3.1	4.3	5.9	6.6
Mobile radio systems	2.3	3.4	5.0	8.1
Private telecommunications systems	2.7	4.6	7.1	10.2
Other	1.2	1.9	2.5	7.6
	30.4	45.1	65.3	7.9
North America	14.2	19.2	25.9	6.2
Europe	6.2	10.0	16.1	10.1
Other industrialized lands	2.4	3.2	4.3	6.1
Middle East	3.6	6.5	10.0	10.8
Other underdeveloped lands	4.0	6.2	9.0	8.5
	30.4	45.1	65.3	7.9

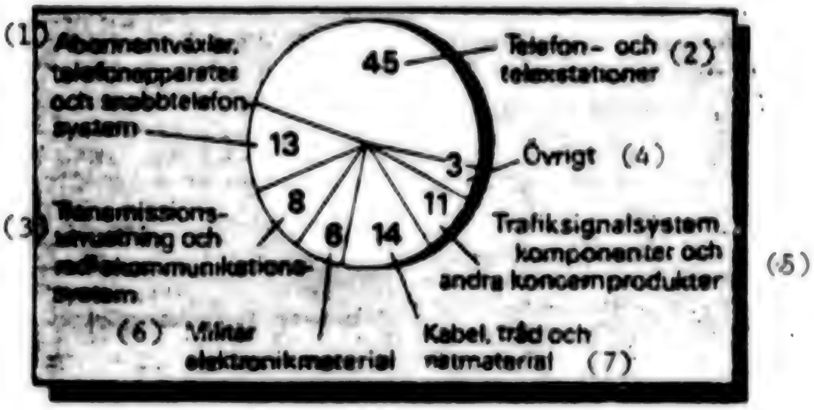
(Calculations and estimates: Laurie, Millbank & Co.)



Sales of Telecommunications Equipment on the International Market
(in millions of kronor)

Key: 1. LM Ericsson

LM Ericsson is the world's second largest exporter of telecommunications equipment. When it comes to total sales (including the domestic market) LM Ericsson ranks fifth. (Source: TELECOMMUNICATIONS, July 1980)



Billing By Product Group in Percentages

Key:
1. Subscriber exchanges, telephone sets, rapid telephone systems
2. Telephone and telex stations

[Key continued]

[Key, continued]

3. Transmission equipment and radio communications systems
4. Other
5. Traffic signal systems, components and other company products
6. Military electronics materiel
7. Cable, wire and mesh materiel

LM Ericsson sales are dominated by telephone stations.

In 1979--the firm's 104th year of activity--the LM Ericsson Telephone Share Company had total sales of 9329 million kronor, 81 percent from sales abroad. Profits before book-balancing dispositions and taxes were 786 million kronor.

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SWEDEN TO IMPROVE TELEX NET, NEW TELECOMMUNICATIONS SYSTEMS

Stockholm SVENSKA DAGBLADET in Swedish 23 Sep 80 p 29

[Article by Johan Myrsten]

[Excerpt] General delivery telephone service, computerized telephone answering service, reference computers, electronic blackboards, voice control instead of pushing buttons, remote dictation...

There are many new things in store for us in the computerized telecommunications network of the future.

Some of these new telecommunications inventions are still in the idea stage. But reference computers, also called the electronic empty desk, are already being tested by Folksam and will soon be tested by the ministries too.

How many will be market successes is a question for a later date. There are examples of other technical inventions which did not fare very well, including picture telephones and TV conferences.

New Telefax

Telefacsimile or telefax (the transmission of text or pictures over telephone lines) has not yet made a breakthrough in Sweden. Only 2000 sets are in use in the entire country. A second generation is being marketed this year by the Telecommunications Board in competition with private suppliers. These sets are quicker and the Telecommunications Board believes they have a greater chance of succeeding. In the future are third and fourth generations where information can be compressed and sent even more quickly with the help of computer technology.

The telex network in Sweden is being modernized. Electronic exchanges are replacing electromechanical exchanges. When this is completed, in 1981 or 1982, many new telex services will be introduced, for example card numbers, reference and automatic group writing. But a little bit later an exciting future awaits when telex can be replaced by the new textual communication form, Teletex.

Teletex 1981

Teletex will be launched in the fall of 1981, according to the Telecommunications Board. It is based on communication between computer terminals, first inside the country but later also internationally. Transmission is rapid--about 10 seconds for an A4-size page in the first generation--and the text can later be stored in the terminals for editing in the same way as word processing machines are used.

According to an agreement from last year with the Telecommunications Board suppliers of Teletex equipment for the Swedish telecommunications network will be LM Ericsson and Swedish Philips, Inc. Teletex is expected to have a key role in the development toward offices where text, number, computer and picture processing as well as communications all go together in one system and where quantities of information are exchanged under the collective name of electronic mail.

"Developments in the Teletex area are dramatic," said chief engineer J. Alex Eckerstrom, one of those responsible for future planning in the central administration of the Telecommunications Board.

"We think an important area is development of the telephone answering concept. The digital technique can eliminate many of the weaknesses of today's telephone answering services. There is a great need for intelligent service.

"If someone tries to reach another person on the job he may have one chance in three of getting through to him directly," said J. Alex Eckerstrom.

Tests have already begun of reference computers or the company's electronic empty desk. Information is assembled on a computer screen from those who cannot be reached by telephone so that the person calling up can receive the information from the telephone answering service.

Automatic location of individuals could then be the next step.

Computerized telephone answering services for small companies among others are a further development still only in the idea stage. The idea is that the person calling up can be referred to a telephone operator who with the help of a text screen could give answers, greetings, information and instructions and perform other tasks for those subscribing to the answering service.

"I am interested in communication between people and machines. This has to be a kind of dialogue with few choices to be made by the person involved, otherwise it is too difficult for the person calling up to handle the situation," said J. Alex Eckerstrom.

"In the United States there is a very sophisticated voice storage system which can come on automatically when a telephone number is busy. The stored vocal information can later be referred to by the person being called whenever it is convenient for him."

The information is not stored the way it is in a regular tape recorder, where the messages must be played in the order in which they were received. With the digital technique the person being called can go through the messages in any order he likes. A possible development would be the introduction of "general delivery telephone service," where messages received could be played back when the subscriber gives an identification number, for example from a telephone box.

Remote dictation is another technical possibility. First with a human answering service, later on (at least internally within a company) with automatic notation of messages.

Voice Control

"Voice control is an alternative to using buttons that is being studied here," said J. Alex Eckerstrom.

Such systems recognize certain distinct spoken words.

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TELETEX TO BEGIN OPERATION IN NEAR FUTURE

Stockholm SVENSKA DAGBLADET in Swedish 11 Sep 80 p 4

[Article by B. F. Hansen]

[Text] Swedish Television has given the green light for the introduction of a new mass medium in this country. It is Teletex, a transmitted supplement to TV 1 and TV 2. This decision will have consequences for manufacturers and consumers extending 12 to 15 years into the future.

The company, with Magnus Faxen as president and Lennart Sandgren as chairman of the board, thus bypassed a national report and current test projects. The Information Technology Committee will issue its final report in the spring of 1981, a report that will contain proposals on Teletex.

Education Minister Jan-Erik Wikstrom told SVENSKA DAGBLADET that he knew nothing of the decision which was made several months ago. He did not wish to comment on it but referred us to the chairman of the committee.

"We were aware of this and reacted immediately," said Sven Gustafson, the committee chairman. "But there is no reason to dramatize the matter. We regarded it as a policy statement by the company. Definite decisions cannot be made before we have issued our proposals," Sven Gustafson said.

"Teletex has come to stay," the board of directors declared. The important thing for manufacturers and consumers is that the board clearly indicated which of several existing systems will be used--the British Ceefax. With regard to tests the board said they showed Teletex works admirably. The group conducting the tests will therefore be expanded and continue as a new permanent branch of activity within the company.

Great Enthusiasm

This is important news for the individual consumer who is considering the replacement of a receiver now or in the near future. Many have speculated over what would be television's next big step after the introduction of color. The company's decision indicates it might be Teletex.

In the tests being conducted 160 specially selected deaf and hearing-impaired people are acting as a test panel. They receive about 3 hours of textual programming a week and also get about 100 pages of news and other information. But in reality the potential public is much larger than this. In this country there are already about 15,000 new receivers equipped for Teletex and according to a forecast repeated by Swedish Television in a statement it is expected this figure will rise to 20-25,000 by the end of this year.

The board's position can be summarized like this:

Teletex supplements regular TV and is therefore a natural part of the activities of Swedish Television.

Sweden will continue with the present English system for at least one receiver generation (12-15 years).

An improvement in the system should not affect the possibilities of using receivers already in existence.

The working group with Ake Holmberg as project leader is very enthusiastic. In the near future the group will grow from 6 to 8 people. Three people will work on program texts and an equal number will produce the 100 pages of news and information. During the test which is being conducted in cooperation with the National Association for the Deaf amd Hearing Assistance it was possible to discover new ways to make the programs available to those with hearing handicaps.

Exciting

The general public can receive Teletex when TV 1 and TV 2 are transmitting. Using a box equipped with buttons one can order the text of a program or interrupt the broadcast to receive some of the 100 pages of news.

"Next to direct broadcasts, Teletex is the quickest news medium," Ake Holmberg said.

Technically Teletex involves utilizing empty space on the two TV channels. This space is far from being fully utilized at present.

"The technique allows us to do 800 pages. Theoretically we could do even more than that but we don't have the resources for it yet," said editor Bjorn Grundel.

Today Teletex offers news, sports, weather, a guide to TV programs and announcements, a light page with puzzles, tables and sports results, instructions on Teletex, etc. There is also a clock page the viewer can incorporate into regular programs when he needs to keep track of the time.

"This is an exclusive and exciting medium for everyone," said Ake Holmberg. "This is just the beginning. We won't be a regular service before we have the resources to provide a news program we can be proud of."

The cost of Teletex equipment is presently around 1000 kronor in addition to the cost of a regular TV set.

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GOVERNMENT TO BEGIN TESTING LOCAL TELEVISION SYSTEM

Stockholm DAGENS NYHETER in Swedish 24 Sep 80 p 14

[Article by Gunnilla Tengvall]

[Text] After local radio comes local TV. The first week in November trial broadcasts will begin in Huddinge outside Stockholm. Saron Church may also start its own broadcasts then in Annedal, Goteborg. Plans for local TV in Navestad outside Norrkoping were dropped after a majority of tenant association members in the area voted against the idea.

"Just now the biggest problem is how to adjust the TV sets," said Madeleine Berg who is administrator, technician and instructor for the project in Huddinge.

"All TV sets are different. Two separate adjustments must be made to receive the middle band, Channel 6, where the program will be transmitted. Some sets have small controls that have to be moved, some have dials and others have buttons that must be pushed."

A week before the broadcasts begin Huddinge residents will receive instructions on how to receive the program on their TV sets. The town of Huddinge is paying for the whole thing, at least up until 15 December. Later on funding is less certain. The Immigration Agency has refused to contribute money. But that decision has been appealed.

Immigrants

Many of the programs will be aimed at immigrants who make up 40 percent of the Huddinge population. Half are from Finland. For this reason the Finnish Society has shown great interest in preparing programs as have the Turkish and Kurdish associations and the Immigrant Women's Society.

The Liberal and Center parties and VPK [Left Party Communists] would also like to send programs. So would the local sports club and of course the Swedish Church and the Pentecostal Church.

Forty percent of local radio broadcasts come from religious bodies. And the churches are also very interested in local TV. The TV studio in Huddinge is located on the premises of Flemingsberg Church.

Cost

The broadcasts will reach the immigrants in West Flemingsberg and patients at Huddinge Hospital. With the town paying for all starting costs those preparing programs only have to pay the cost of taping the shows.

But how much will it cost in all? Olle Palmborg of the Local Radio Committee had this to say:

"Setting up the broadcast network cost almost 100,000 kronor in Huddinge. Usually some local groups can come up with this kind of money; in this case it was the church. One can find used video equipment for 15-20,000 kronor. Then the local groups must get instruction on how to take care of the equipment. In Huddinge Madeleine Berg is in charge of that. The local clubs prepare the programs on a voluntary basis."

Saron Church

In Goteborg the Saron congregation (Baptists) may back local TV tests. That is if the congregation agrees to get things going. They have sent local radio programs in Annedal in the past but there is some hesitation about sending TV programs.

"Some of the members of the congregation are afraid local TV will make people too passive," said Sven Forshamn of the Saron congregation. "We have to make a decision within 2 weeks at the latest."

The Baptists have members with professional broadcasting experience. They could also contribute material from their own firms which means the programs could be produced very cheaply. Nonreligious groups could also send programs if they pay for their share of the expenses.

Norrkoping

Immigrant groups in the Norrkoping suburb of Navestad were interested in local TV. Like Huddinge, Navestad has a 40 percent immigrant population. Tenant associations were also going to pay part of the cost. But in a survey a majority of the members rejected local TV and the associations withdrew their support.

The state will not fund local TV or local radio broadcasts. But it does fund the Local Radio Committee which sets broadcast times. The committee will also evaluate local radio and TV. It will release its first report on local radio in February.

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SWEDEN

BRIEFS

TELETEX: 'POLITICAL QUESTION'--It is a political question when, if and how TV sets will become computer data screens. After that the Telecommunications Board will run tests for a year and a half on teledata--which also used to be called data-TV and datavision. Some 20 firms, including SVENSKA DAGBLADET and five other daily papers, will take part in the tests. At present private individuals are excluded for legal reasons. "We don't know who will be chosen to develop the system in the future but while we wait for a decision we felt the Telecommunications Board had an obligation to allow certain groups to try out the technology," said Bo Adolfsson of the board. "For example it has been found that input is much harder than we had expected and requires a lot of thought and work." The Information Technology Committee is looking into possible organization forms, copyright questions, etc. The committee published one report in 1979 and intends to issue its final report in the first half of 1981. "Our main task is to find general solutions regardless of technical details," said committee secretary Tomas Ohlin. Teletex is closely related to teledata. Here text and graphics are shown on a TV screen via the TV network. Tests of this are also being conducted here by Swedish Television, Inc. and Philips. [Text] [Stockholm SVENSKA DAGBLADET in Swedish 23 Sep 80 p 29] 6578

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November 5, 1980

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